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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,189	06/23/2006	Hongyuan Wang	1752-0183PUS1	8002

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EXAMINER

LISTVOYB, GREGORY

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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01/16/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/584,189

Applicant(s)

WANG

Examiner

Gregory Listvoyb

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/23/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

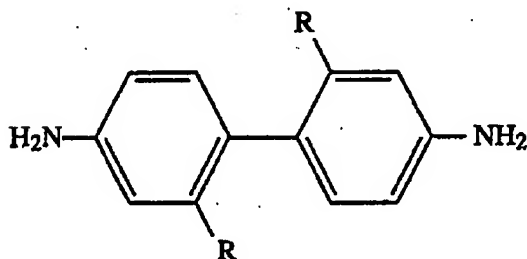
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 rejected under 35 U.S.C. 102(b) as being anticipated by Maruta et al (US 5478918) herein Maruta.

Maruta discloses a polyamic acid composition solution includes a tetracarboxylic acid component containing not less than 70 mol % of at least one selected from the group consisting of benzenetetracarboxylic acid and its reactive derivatives; a maleimide compound; and a diamine component containing not less than 70 mol % of 2,2'-substituted-4,4'-benzidine represented by the general formula (I):



Where R is CF₃, CH₃, C₂H₅, OCH₃, OC₂H₅ (meets the limitations of Claim 1), Halogen or Phenyl (see Abstract).

Maruta teaches that tetracarboxylic acid dianhydride component comprises at least 70% mol of pyromellitic dianhydride (see Column 3, line 5) and less than 30% of other aromatic dianhydride including oxydiphthalic acid or biphenyltetracarboxylic acid dianhydride (see Column 3, line 10, meeting the limitations of Claim 5).

Regarding Claims 2 and 4 Maruta teaches a polyamic acid comprising less than 29% mol of other diamine, such as phenylenediamine (see Column 3, line 65).

In reference to Claim 7, since Maruta's polyimide has the structure, which has the same main components as the Applicant's polymer, it inherently meets the values of the elastic modulus, moisture adsorption, coefficient of thermal and humidity expansion of the above claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 rejected under 35 U.S.C. 103(a) as being unpatentable over Maruta.

Maruta discloses a polyamic acid composition solution includes a tetracarboxylic acid component containing not less than 70 mol % of at least one selected from the group consisting of benzenetetracarboxylic acid and its reactive derivatives; a maleimide compound; and a diamine component containing not less than 70 mol % of 2,2'-substituted-4,4'-benzidine and less than 29% mol of other diamine (see discussion above).

Maruta does not disclose 2,2'-ethoxy-4,4'-benzidine and phenylenediamine in his Examples.

However, according to MPEP 2123, disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments (see also *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971), *In re Gurley*, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994), *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

In Examiner's position, 2,2'-ethoxy-4,4'-benzidine is a reasonable choice, since it provides a bulky group (compare to CF₃, CH₃, Hal or OCH₃), which decreases intermolecular interactions between polyimide precursor chains, increasing its processability. Phenylenediamine and other aromatic diamines enhance such mechanical properties as Young Modulus and toughness of the final product (film).

Therefore, it would have been obvious to a person of ordinary skills in the art to use 2,2'-ethoxy-4,4'-benzidine and phenylenediamine in Maruta's composition, since it provides good processability and good mechanical properties (Young Modulus and toughness) of the final product.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory Listvoyb whose telephone number is (571) 272-6105. The examiner can normally be reached on 10am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Gregory Listvoyb
Examiner
Art Unit 1796

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RABON SERGENT
PRIMARY EXAMINER